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AMENDMENTS TO THE CLAIMS

Please add new claims 29-66

29. A self-blunting needle device comprising:

an external component comprising a cannula member and an external component hub, wherein the cannula member comprises a through-bore, a tip, and a mounting end;

an internal component comprising an elongate member having a tip, wherein the elongate member is disposed within the through-bore of the cannula member, and wherein the external component and the internal component are movable relative to each other between a sharpened configuration and a blunting configuration;

a guide surface leading axially towards the through-bore of the cannula member, wherein the guide surface is positioned and configured to guide the elongate member into the through-bore of the cannula member in the assembly of the device; and

a detent and groove engagement between the external component and the internal component configured to inhibit movement from the blunting configuration to the sharpened configuration.

30. The device of claim 29, wherein the guide surface converges axially from a first entry aperture larger than the through-bore to a first gate aperture not larger than the through-bore, wherein the first gate aperture is aligned with the through-bore.

31. The device of claim 29, wherein the guide surface comprises a non-convergent surface that defines a groove that is positioned and configured to guide the elongate member into the through-bore of the cannula member.

32. The device of claim 30, wherein the cannula member defines a longitudinal axis, at least a portion of the guide surface defines an angle α relative to the cannula member axis, and the angle α has a magnitude in the range of from about 5 to 75 degrees.

33. The device of claims 29 comprising a guide member disposed at the mounting end of the cannula member, wherein the guide member defines the guide surface.

34. The device of claim 33, wherein the guide member is disposed within the external component hub.

35. The device of claim 33, wherein the guide member is integrally formed as part of the external component hub.

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36. The device of claim 35, wherein the guide member comprises an alignment lug formed on the external component hub.

37. The device of claim 30 comprising a guide member comprising a first end, a second end, and a passage, wherein

the first end comprises the first guide surface;

the second end comprises a second entry aperture larger than the cannula member and a second guide surface that converges axially to a second gate aperture smaller than the second entry aperture but not smaller than the cannula member,

the passage extends between and is axially aligned with the first and second gate apertures,

the second guide surface is positioned and configured to guide the cannula member into the passage of the guide member in the assembly of the device,

the cannula member extends through the second gate aperture, and

the mounting end of the cannula member is mounted within the passage.

38. The device of claim 37, wherein the first gate aperture is smaller than the passage in the guide member and smaller than the cannula member, thereby defining in the passage a stop shoulder at the first gate aperture.

39. The device of claim 37, wherein at least a portion of the second guide surface defines an angle α relative to the cannula member axis and wherein the angle has a magnitude in the range of from about 5 to 75 degrees.

40. The device of claim 29 in combination with a syringe, further comprising an actuation member for moving the device from the sharpened configuration to the blunted configuration.

41. The device of claim 29, wherein the detent and groove engagement is dimensioned and configured to releasably maintain the device in the sharpened configuration prior to its movement to the blunted configuration.

42. The device of claim 29, wherein the cannula member is a needle cannula comprising a puncture tip, and the elongate member is a blunting member comprising a blunt tip.

43. The device of claim 42, wherein in the sharpened configuration, the blunt tip of the blunting member is positioned short of the puncture tip of the needle cannula to leave the

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puncture tip exposed, and in the blunting configuration, the blunt tip of the blunting member extends beyond the puncture tip of the needle cannula to effectively blunt the device.

44. A method for assembling a self-blunting needle device for a syringe, wherein the device comprises an internal component having an elongate member, and an external component having a cannula member with an axially-extending through-bore therein,

the method comprising:

advancing the elongate member into contact with a guide surface, wherein the guide surface leads axially to the through-bore to guide the elongate member into the through-bore, and

advancing the elongate member along the guide surface and into the through-bore without engaging a catch surface perpendicular to the cannula member, to produce the assembled device.

45. The method of claim 44 comprising advancing the internal component into contact with a non-convergent guide surface.

46. The method of claim 44 comprising advancing the internal component into contact with an axially convergent guide surface.

47. The method of claim 46, wherein the guide surface defines an entry aperture that is larger than the through-bore of the external component and converges to a gate aperture that is not larger than the through-bore of the external component, the gate aperture facing and being aligned with the through-bore,

the method comprising aligning the internal component with the entry aperture and advancing the internal component towards the external component so that the internal component passes through the entry aperture, into contact with the guide surface and then through the gate aperture and into the through-bore.

48. The method of claim 44, wherein the guide surface is provided by a non-integral guide member and wherein the method comprises removing the assembled device from the guide member.

49. The method of claim 48, wherein

the external component comprises a cannula member having a tip and a mounting end mounted in a hub, wherein the hub defines an aperture that permits access to the through-bore by the internal component,

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the guide member comprises a funnel having a gate aperture and an exit aperture;
and wherein

the method comprises:

aligning the gate aperture of the funnel with the through-bore at the tip of
the cannula member,

passing the internal component through the guide member, and

removing the assembled device from the guide member.

50. The method of claim 49, further comprising securing a nut to the internal
component after the internal component passes through the guide member.

51. The method of claim 44, further comprising mounting the self-blunting needle
device on a syringe.

52. The method of claim 44, wherein the cannula member is a needle cannula
comprising a puncture tip, and the elongate member is a blunting member comprising a blunt tip.

53. A self-blunting needle device assembled according to the method of claim 44.

54. A method for assembling a self-blunting needle device, wherein the self-blunting
needle device comprises:

an external component comprising a cannula member and a mounting end,
wherein the cannula member comprises a through-bore, a tip, and a mounting end;

a guide member, wherein the guide member comprises a first end, a second end,
and a passage extending axially from the first end to the second end, the first end of the
guide member comprises a first guide surface and a first gate aperture, the second end of
the guide member comprises a second guide surface and a second gate aperture, and the
passage extends axially from the first gate aperture to the second aperture and is sized to
receive the cannula member; and

an internal component comprising an elongate member having a tip, wherein the
elongate member is disposed within the through-bore of the cannula member after
assembly of the device,

the method comprising:

positioning the cannula member with its mounting end disposed towards and in
alignment with the second guide surface of the guide member;

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advancing the cannula member into contact with the second guide surface, through the second gate aperture, into the passage, and into alignment with the first gate aperture;

positioning the elongate member with its tip disposed towards and in alignment with the first guide surface of the guide member; and

advancing the elongate member into contact with the first guide surface, through the first gate aperture, and into the through-bore of the cannula member.

55. The method of claim 54, wherein the first end of the guide member further comprises a first entry aperture larger than the elongate member, the first guide surface leads axially to the first gate aperture, and the first gate aperture is smaller than the first entry aperture, but not smaller than the elongate member.

56. The method of claim 54, wherein the second end of the guide member comprises a second entry aperture larger than the cannula member, the second guide surface leads axially to the second gate aperture, and the second gate aperture is smaller than the second entry aperture, but not smaller than the cannula member.

57. The method of claim 54, wherein the first gate aperture is smaller than the passage in the guide member and smaller than the cannula member, thereby defining in the passage a stop shoulder at the first gate aperture.

58. The method of claim 54, further comprising installing the self-blunting needle device in a medical fluid-handling device comprising an actuation member for moving the device between a sharpened configuration and the blunted configuration.

59. The method of claim 54, wherein the cannula member is a needle cannula comprising a puncture tip, and the elongate member is a blunting member comprising a blunt tip.

60. A self-blunting needle device assembled according to the method of claim 54.

61. A self-blunting needle device comprising:

an external component comprising a cannula member and an external component hub, wherein the cannula member comprises a through-bore, a tip, and a mounting end;

an internal component comprising an elongate member having a tip, wherein the elongate member is disposed within the through-bore of the cannula member,

and wherein one of the external component and internal component has a puncture tip and the other has a blunt tip, and the external component and the internal component

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are movable relative to each other between a sharpened configuration and a blunting configuration;

a guide surface leading axially towards the through-bore of the cannula member, wherein the guide surface is positioned and configured to guide the elongate member into the through-bore of the cannula member in the assembly of the device; and

a detent and groove engagement between the external component and the internal component configured to inhibit movement from the blunting configuration to the sharpened configuration.

62. A self-blunting needle device comprising:

an external component comprising a cannula member and an external component hub, wherein the cannula member comprises a through-bore, a tip, and a mounting end;

an internal component comprising an elongate member having a tip, wherein the elongate member is disposed within the through-bore of the cannula member,

and wherein one of the external component and internal component has a puncture tip and the other has a blunt tip, and the external component and the internal component are movable relative to each other between a sharpened configuration and a blunting configuration;

a guide surface on the device that leads axially towards the through-bore of the cannula member so that the guide surface can serve as a guide for the insertion of the elongate member into the through-bore during assembly of the device, wherein the guide surface converges axially from a first entry aperture larger than the through-bore to a first gate aperture not larger than the through-bore, the first gate aperture being aligned with the through-bore; and

a detent engagement between the external component and the internal component configured to inhibit movement from the blunting configuration to the sharpened configuration.

63. A self-blunting needle device comprising:

an external component comprising a cannula member and an external component hub, wherein the cannula member comprises a through-bore, a tip, and a mounting end;

an internal component comprising an elongate member having a tip, wherein the elongate member is disposed within the through-bore of the cannula member,

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and wherein one of the external component and internal component has a puncture tip and the other has a blunt tip, and the external component and the internal component are movable relative to each other between a sharpened configuration and a blunting configuration;

a guide surface on the device that leads axially towards the through-bore of the cannula member so that the guide surface can serve as a guide for the insertion of the elongate member into the through-bore during assembly of the device, wherein the guide surface converges axially from a first entry aperture larger than the through-bore to a first gate aperture not larger than the through-bore, the first gate aperture being aligned with the through-bore; and

an engagement means between the external component and the internal component configured to inhibit movement from the blunting configuration to the sharpened configuration.

64. A self-blunting needle device comprising:

an external component comprising a cannula member and a guide member, wherein the cannula member comprises a through-bore, a tip, and a mounting end;

an internal component comprising an elongate member having a tip, wherein the elongate member is disposed within the through-bore of the cannula member,

and wherein the external component and the internal component are movable relative to each other between a sharpened configuration and a blunting configuration;

wherein the guide member comprises a first end, a second end, and a passage extending axially from the first end to the second end, wherein

the first end of the guide member comprises a first guide surface and a first gate aperture,

the second end of the guide member comprises a second guide surface and a second gate aperture, and

the passage extends axially from the first gate aperture to the second aperture and is sized to receive the cannula member.

65. The device of claim 63, wherein

the first end of the guide member further comprises a first entry aperture larger than the elongate member,

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the first guide surface leads axially to the first gate aperture, and
the first gate aperture is smaller than the first entry aperture, but not smaller than
the elongate member.

66. The device of claim 63, wherein
the second end of the guide member comprises a second entry aperture larger than
the cannula member

the second guide surface leads axially to the second gate aperture, and
the second gate aperture is smaller than the second entry aperture, but not smaller
than the cannula member.

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